

Comparative Analysis of Classical and Parallel Inpainting Algorithms Based on Affine Combinations of Projections on Convex Sets

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Abstract : The paper is a comparative study of two classical variants of parallel projection methods for solving the convex feasibility problem with their equivalents that involve variable weights in the construction of the solutions. We used a graphical representation of these methods for inpainting a convex area of an image in order to investigate their effectiveness in image reconstruction applications. We also presented a numerical analysis of the convergence of these four algorithms in terms of the average number of steps and execution time in classical CPU and, alternatively, in parallel GPU implementation.

Keywords : convex feasibility problem, convergence analysis, inpainting, parallel projection methods

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